

25096B

Amendments to the Claims

1-13 (Canceled)

14. (Previously Presented) A method of recycling building materials into a fuel and useful residue material, comprising:

introducing the building materials into a combustion chamber;

combusting a combustible portion of the building materials as a fuel within the combustion chamber; and

using the noncombustible portion of the building materials as one of a clinker material or an emissions reduction material.

15. (Previously Presented) A method according to claim 14, wherein an organic portion of the building materials is combusted and an inorganic portion of the building materials is used as an emissions reduction material.

16. (Previously Presented) A method according to claim 15, wherein the building materials comprises a shingle, the recycling process further comprising the steps of:

combusting an asphalt material from a glass substrate of the shingle; and

using a filler in said asphalt as an emissions reduction material in a boiler.

17. (Previously Presented) A method according to claim 16, wherein said method comprises feeding said shingle into as a fuel to a fluidized bed boiler having a fuel feed system and a lime feed system, and wherein the amount of lime fed into the boiler is reduced based on the amount of lime in the asphalt filler.

18. (Previously Presented) A method according to claim 16, wherein the asphalt is filled with a limestone or dolomitic material and the limestone or dolomitic material provides a source of lime to reduce an amount of sulfur emissions from the boiler.

25096B

19. (Previously Presented) A method according to claim 18, wherein the shingle further comprises surface granules, said granules providing a source of bed material in said boiler.

20. (Previously Presented) A method according to claim 19, wherein said shingle comprises scrap from the manufacture of roofing shingles.

21. (Previously Presented) A method according to claim 16, wherein said shingle is removed from a building along with further building materials selected from the group consisting of nails, wood, felt paper, ice shield, and roofing accessories, and wherein each of said further building materials provides fuel or bed materials for said boiler.

22. (Previously Presented) A method according to claim 15, wherein the building materials comprise shingles.

23. (Previously Presented) A method according to claim 22, wherein the shingles comprise asphalt and wherein the recycling process further comprising the steps of combusting said asphalt and an organic substrate of the shingle.

24. (Previously Presented) A method according to claim 23, wherein the shingle further comprises an asphalt filler and wherein said shingle comprises surface granules, said granules providing a source of lime or as an emissions reduction material in a boiler.

25. (Previously Presented) A method according to claim 22, wherein the shingles comprising surface granules and asphalt with a filler, the method further comprising the steps of:

- combusting said asphalt from a glass substrate of the shingle; and
- incorporating a noncombustible portion of the shingle in a bed of the boiler as an emissions reduction material.

25096B

26. (Previously Presented) A method according to claim 22, wherein the shingle comprises a filled resinous material, the recycling process further comprising the steps of:
combusting a resin from a filler material of the shingle; and
using said filler as an emissions reduction material in a boiler.

27. (Previously Presented) A method according to claim 14, further comprising:
removing the building materials from a building before introducing the building materials into a cement kiln or a boiler.

28. (Previously Presented) A method according to claim 27, wherein the building materials comprise siding.

29. (Previously Presented) A method of recycling a shingle into a fuel and useful residue material, comprising:

introducing the shingle into a combustion chamber of a fluidized bed boiler having a fuel feed system and a lime feed system;

combusting an asphalt material from a glass substrate of the shingle as a fuel within the combustion chamber; and

using a filler in said asphalt as an emissions reduction material in the boiler, wherein an amount of lime fed into the boiler is reduced based on an amount of lime in the asphalt filler.

30. (Previously Presented) A method of recycling asphalt shingles having a filler material, comprising:

introducing the shingles into a fluidized bed boiler;

combusting the asphalt from said shingles as a fuel in said boiler; and

using said filler material to reduce emissions from said boiler.

31. (Previously Presented) A method of recycling asphalt shingles according to claim 30, further comprising the step of incorporating a surfacing granule as a bed material in said boiler.

25096B

32. (Previously Presented) A method according to claim 30, wherein the fluidized bed boiler comprises a system for feeding an amount of lime into the boiler, and wherein the amount of lime is reduced based on the amount of lime in the shingles.

33. (Previously Presented) A method according to claim 30, wherein the fluidized bed boiler comprises a system for feeding an amount of lime into the boiler, and wherein the amount of lime is reduced based on the amount of shingles fed into the boiler as fuel.

34. (Previously Presented) A method according to claim 30, wherein the fluidized bed boiler comprises a system for feeding an amount of lime into the boiler, and wherein the amount of lime fed from the lime feed system is reduced by at least five percent due to the filler material.

35. (Previously Presented) A method according to claim 30, wherein the boiler combusts an amount of fuel, and wherein an amount of lime fed into the boiler comprises at least five percent by weight of the fuel, and wherein the shingles contribute at least ten percent of said lime.

36. (Previously Presented) A method according to claim 30, wherein the fluidized bed boiler comprises a system for feeding an amount of lime into the boiler, and wherein the amount of lime fed from the lime feed system is reduced by at least five percent due to the filler material.

37. (Previously Presented) A method according to claim 36, wherein the amount of lime fed from the lime feed system is reduced by at least fifteen percent due to the filler material.

38. (Previously Presented) A method according to claim 36, wherein the boiler combusts an amount of fuel, and wherein the bed includes approximately twenty percent lime by

25096B

weight of the fuel, and wherein the asphalt contributes at least one of said approximately twenty percent lime.

39. (Previously Presented) A method according to claim 36, wherein the asphalt contributes at least approximately three of said approximately twenty percent lime.

40. (Previously Presented) A method according to claim 39, wherein said asphalt comprises at least approximately ten percent of said fuel.

41. (Previously Presented) A method according to claim 39, wherein said asphalt comprises asphalt shingles, and wherein said asphalt shingles comprise at least approximately ten percent by weight of said fuel.

42. (Previously Presented) A method of recycling building materials having a combustible portion and a noncombustible portion into a cement material, comprising: introducing the building materials into a cement kiln; combusting the combustible portion of the building materials as a fuel; and incorporating the noncombustible portion of the building materials into a clinker material wherein an organic portion of the building materials is combusted and an inorganic portion of the building materials is incorporated into the clinker material, wherein the building materials comprises a shingle, the recycling process further comprising the steps of: combusting an asphalt material from a glass substrate of the shingle; and incorporating said substrate into said clinker material as a source of minerals for said cement material.

43. (Previously Presented) A method according to claim 42, wherein said substrate further comprises silica and useful elements comprising Calcium and Aluminum which are incorporated into said clinker material as a source of minerals for said cement material.

44. (Previously Presented) A method according to claim 42, further comprising:

25096B

removing the building materials from a building before introducing the building materials into a cement kiln.

45. (Previously Presented) A method according to claim 44, wherein the building materials comprise siding.

46. (Previously Presented) A method of recycling building materials comprising shingles having a combustible portion and a noncombustible portion into a cement material, comprising:
introducing the shingles into a cement kiln;
combusting an asphalt portion of the shingles from a glass substrate of the shingles as a fuel; and
incorporating said substrate and a limestone or dolomitic filler material from the asphalt as a source of minerals, including calcium and magnesium from said filler, in said cement material.

47. (Previously Presented) A method according to claim 46, wherein the shingle further comprises surface granules, said granules providing a source of minerals in said cement.

48. (Previously Presented) A method according to claim 47, wherein said shingle comprises scrap from the manufacture of roofing shingles.

49. (Previously Presented) A method of recycling building materials comprising a shingle into a cement material, comprising:

removing the building materials, including the shingle, from a building along with further building materials selected from the group consisting of nails, wood, felt paper, ice shield, and roofing accessories;

introducing the building materials into a cement kiln;
combusting an asphalt material from a glass substrate of the shingle as a fuel and
incorporating said substrate into said clinker material as a source of minerals for said cement material;

25096B

combusting a combustible portion of the further building materials as a fuel; and incorporating the noncombustible portion of the building materials into a clinker material, wherein each of said further building materials provides fuel or raw materials for said cement material.

50. (Previously Presented) A method according to claim 49, wherein the asphalt is filled with limestone or dolomite and the limestone or dolomite provides a source of calcium and magnesium in said cement.

51. (Previously Presented) A method according to claim 50, wherein the further building materials comprises nails and wherein said nails provide iron for said cement.

52. (Previously Presented) A method according to claim 51, wherein said shingle further comprises surface granules, said granules providing a source of minerals in said cement.

53. (Previously Presented) A method of recycling building materials comprising shingles having a combustible portion and a noncombustible portion into a cement material, comprising:
introducing the shingles into a cement kiln;
combusting the combustible portion of the shingles as a fuel; and
incorporating the noncombustible portion of the shingles into a clinker material;
wherein an organic portion of the shingles is combusted and an inorganic portion of the shingles is incorporated into the clinker material.

54. (Previously Presented) A method of recycling building materials comprising shingles having a combustible portion and a noncombustible portion into a cement material, comprising: introducing the shingles into a cement kiln;
combusting the combustible organic portion of the shingles as a fuel, wherein the shingles comprise asphalt and wherein the recycling process further comprising the steps

25096B

of combusting said asphalt and an organic substrate of the shingles; and incorporating the noncombustible inorganic portion of the shingles into a clinker material.

55. (Previously Presented) A method according to claim 54, wherein the shingle further comprises surface granules, said granules providing a source of minerals in said cement.

56. (Previously Presented) A method according to claim 55, wherein the shingle further comprises a filler material in said asphalt and wherein filler providing a source of minerals in said cement.

57. (Previously Presented) A method according to claim 53, wherein the shingle comprises a filled asphalt, the recycling process further comprising the steps of: combusting said asphalt from a glass substrate of the shingle; and incorporating said substrate into said cement material as a source of silica.

58. (Previously Presented) A method of recycling building materials comprising a shingle including a mineral-filled asphalt and a filler material into a cement material, the method comprising:

introducing the shingle into a cement kiln;

combusting the asphalt as a fuel; and

incorporating the filler material of the asphalt as a source of lime, and a glass mat as a source of silica, into a clinker material.

59. (Previously Presented) A method of recycling asphalt shingles according to claim 58, further comprising the step of incorporating a surfacing granule as a source of minerals into a clinker material.

25096B

60. (Previously Presented) A method of recycling building materials comprising a resinous shingle comprising a filler and having a combustible portion and a noncombustible portion into a cement material, the method comprising: introducing the shingle into a cement kiln; combusting the resin from a filler material of the shingle as a fuel; and incorporating the filler into said cement material as a source of minerals.

61. (New) A method according to any one of claims 14, 42, 46, 48, 49, 53, 54, 58 and 60, wherein the shingles or building materials are introduced in the combustion chamber or kiln through a precalciner and wherein the step of combusting the building materials, shingles, combustible organic portion of the shingles, resin from a filler material of the shingle or asphalt material from a glass substrate comprises combusting the combustible portion of the building materials, combustible organic portion of the shingles, resin from a filler material of the shingle or a portion of the asphalt within the precalciner.

62. (New) A method according to any one of claims 14, 42, 46, 48, 49, 53, 54, 58, 60, and 61 wherein the step of combusting the building materials, shingles, combustible organic portion of the shingles, resin from a filler material of the shingle or an asphalt material from a glass substrate comprises combusting the building materials, shingles, combustible organic portion of the shingles, resin from a filler material of the shingle a portion of the asphalt within the kiln.